

REPORT ON BOILERS.

Received at London Office 17 JUN 1932

Date of writing Report 19 24. 5. 31 When handed in at Local Office 24. 5. 31 Port of Glasgow

No. in Reg. Book. Survey held at Glasgow Date, First Survey 29. 9. 31 Last Survey 23-5-1932

on the new steel 9 1/2 "HARMATRIS" (Number of Visits 100) Tons {Gross 5395 Net 3195}

Master Built at Port: Glasgow By whom built Lithgows Ltd Yard No. 853 When built 1932

Engines made at Glasgow By whom made David Rowan & Co Ltd Engine No. 942 When made 1932

Boilers made at Glasgow By whom made David Rowan & Co Ltd Boiler No. 942 When made 1932

Nominal Horse Power 502 Owners J & C. Harrison Ltd Port belonging to London

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel B. Whittles Ltd (Letter for Record (S)(R))

Total Heating Surface of Boilers 1850 sq ft Is forced draught fitted yes Coal or Oil fired coal

No. and Description of Boilers one single ended Working Pressure 220

Tested by hydraulic pressure to 380 Date of test 18-2-32 No. of Certificate 19095 Can each boiler be worked separately

Area of Firegrate in each Boiler 510 sq ft No. and Description of safety valves to each boiler Two Improved High Lift

Area of each set of valves per boiler {per Rule 6.56 sq ft as fitted 7.96 sq ft} Pressure to which they are adjusted 225 Are they fitted with easing gear yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

Smallest distance between boilers or uptakes and bunkers or woodwork 2'-0" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top/plating 2'-6" Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 13'-3 1/16" Length 11'-6" Shell plates: Material steel Tensile strength 29-33 tons

Thickness 1 3/8" Are the shell plates welded or flanged no Description of riveting: circ. seams {end 1 3/16" B 1 3/8" inner 1 3/8"}

long. seams DBS TR Diameter of rivet holes in {circ. seams F 1 3/16" B 1 3/8" long. seams 1 3/8" Pitch of rivets {F 3.156" B 3.767" 9 5/16"}

Percentage of strength of circ. end seams {plate F 62.3 B 63.5 rivets F 43.4 B 48.8} Percentage of strength of circ. intermediate seam {plate 85.2 rivets 92.5}

Percentage of strength of longitudinal joint {plate 88.9 rivets 92.5 combined 88.9} Working pressure of shell by Rules 220

Thickness of butt straps {outer 31/32" inner 1 3/32"}

No. and Description of Furnaces in each Boiler Three Deighton 3 C

Material steel Tensile strength 26-30 tons Smallest outside diameter 3'-2 9/32"

Length of plain part {top bottom} Thickness of plates {crown 41/64" bottom 6/64"}

Dimensions of stiffening rings on furnace or c.c. bottom - Working pressure of furnace by Rules 244

End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 3/16" Pitch of stays 18" x 16 1/2"

How are stays secured DN steel Working pressure by Rules 220

Tube plates: Material {front back} steel Tensile strength {26-30 tons} Thickness {15/16" 25/32" 229 236}

Mean pitch of stay tubes in nests 9'-6" Pitch across wide water spaces 14" Working pressure {front 229 back 236}

Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder

at centre 2 @ 7 1/8" x 7/8" Length as per Rule 31 1/2" Distance apart 8 1/4" No. and pitch of stays

in each 2 @ 10" Working pressure by Rules 226 Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 3/4" Back 25/32" Top 3/4" Bottom 3/4"

Pitch of stays to ditto: Sides 10" x 8 1/4" Back 10" x 8" Top 10" x 8 1/4" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 221 Front plate at bottom: Material steel Tensile strength 26-30 tons

Thickness 15/16" Lower back plate: Material steel Tensile strength 26-30 tons Thickness 13/16"

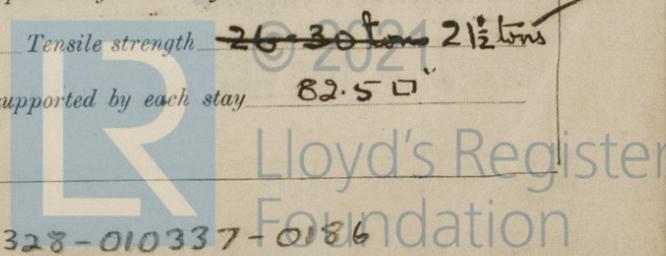
Pitch of stays at wide water space 13 1/16" Are stays fitted with nuts or riveted over nuts

Working Pressure 220 Main stays: Material steel Tensile strength 28-32 tons

Diameter {At body of stay, or Over threads} 3" & 2 3/4" No. of threads per inch 6 Area supported by each stay 305 & 285 sq in

Working pressure by Rules 256 & 230 Screw stays: Material steel Iron Tensile strength 26-30 tons 21 1/2 tons

Diameter {At turned off part, or Over threads} 1 7/8" No. of threads per inch 9 Area supported by each stay 82.5 sq in



Working pressure by Rules **258** Are the stays drilled at the outer ends **no** Margin stays: Diameter ^{At turned off part,} **3"** or ^{Over threads} **3"**

No. of threads per inch **9** Area supported by each stay **94"** Working pressure by Rules **263**

Tubes: Material **Iron** External diameter ^{Plain} **3"** ^{Stay} **3"** Thickness ^{8 w.g.} **1/4"** **5/16"** **3/8"** **7/16"** No. of threads per inch **9**

Pitch of tubes **4 7/8" x 4 3/16"** Working pressure by Rules **250** Manhole compensation: Size of opening in shell plate **19 1/2" x 15 1/2"** Section of compensating ring **9 1/4" x 1 1/2"** No. of rivets and diameter of rivet holes **32 @ 1 3/8"**

Outer row rivet pitch at ends **9 9/16"** Depth of flange if manhole flanged **3"** Steam Dome: Material **none**

Tensile strength _____ Thickness of shell _____ Description of longitudinal joint _____

Diameter of rivet holes **5/8"** Pitch of rivets **1 1/2"** Percentage of strength of joint ^{Plate} _____ ^{Rivets} _____

Internal diameter **5 1/2"** Working pressure by Rules _____ Thickness of crown _____ No. and diameter of stays _____

How connected to shell _____ Inner radius of crown _____ Working pressure by Rules _____

Size of doubling plate under dome _____ Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell _____

Type of Superheater **none** Manufacturers of ^{Tubes} _____ ^{Steel castings} _____

Number of elements _____ Material of tubes _____ Internal diameter and thickness of tubes _____

Material of headers _____ Tensile strength _____ Thickness _____ Can the superheater be shut off and the boiler be worked separately _____

Is a safety valve fitted to every part of the superheater which can be shut off from the boiler _____

Area of each safety valve _____ Are the safety valves fitted with easing gear _____ Working pressure as per Rules _____ Hydraulic test pressure: _____

tubes _____ castings _____ and after assembly in place _____ Are drain cocks or valves fitted to free the superheater from water where necessary _____

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with **yes**

The foregoing is a correct description, for David Rowan & Co. Ltd. Manufacturer. Arch. W. Grierson

Dates of Survey ^{During progress of work in shops - -} _____ ^{During erection on board vessel - - -} _____

Are the approved plans of boiler and superheater forwarded herewith **yes** (If not state date of approval.)

SEE ACCOMPANYING MACHINERY REPORT.

Total No. of visits **100**

Is this Boiler a duplicate of a previous case **no** If so, state Vessel's name and Report No. _____

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

The workmanship and materials are good.

The boiler has been constructed under special survey in accordance with the Rules, satisfactorily fitted on the vessel and its safety valves adjusted.

24/5/32

[Handwritten notes and signatures in the lower section of the report, including 'See Machinery Report' and various initials.]

Survey Fee ... £ _____ When applied for, _____ 19

Travelling Expenses (if any) £ _____ When received, _____ 19

S. C. Davis
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 31 MAY 1932**

Assigned **SEE ACCOMPANYING MACHINERY REPORT.**

